

Nuclear Photo-Electron Avalanche Cells (NPEAC) Generator

Completed Technology Project (2015 - 2016)



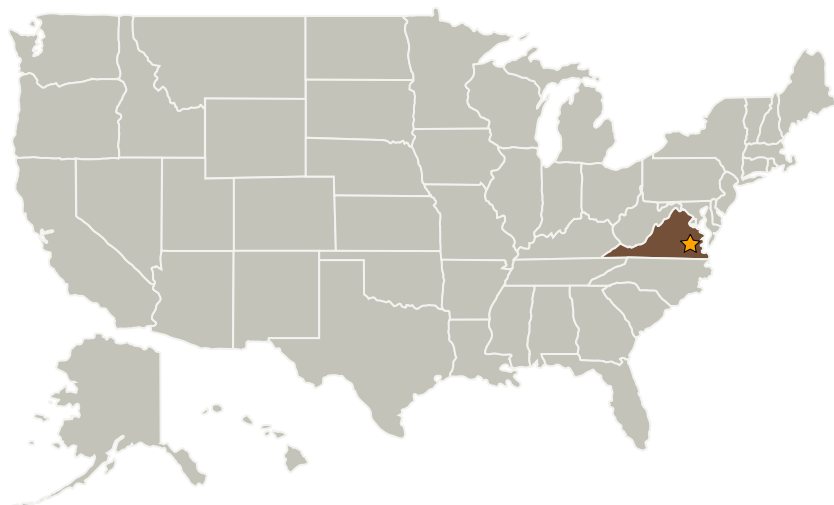
Project Introduction

Vast increase in power density to 1 kWe/kg level or higher by NPEAC would represent a revolution in energy generation for deep space exploration and other terrestrial applications. Many devices and systems can all be powered with NPEAC technology for several years without refueling. Taken to full commercialization, NPEAC will eliminate the need for fossil fuels, solidifying and advancing the economic, military, and scientific supremacy of the United States. For FY17, if the test with 320 keV x-ray source is successful in a vacuum chamber, the efforts will proceed to using radio-isotope elements as gamma ray source for building an independent NPEAC prototype.

Anticipated Benefits

Vast increase in power density to 1 kWe/kg level or higher by NPEAC would represent a revolution in energy generation for deep space exploration and other terrestrial applications. Many devices and systems can all be powered with NPEAC technology for several years without refueling. Taken to full commercialization, NPEAC will eliminate the need for fossil fuels, solidifying and advancing the economic, military, and scientific supremacy of the United States. For FY17, if the test with 320 keV x-ray source is successful in a vacuum chamber, the efforts will proceed to using radio-isotope elements as gamma ray source for building an independent NPEAC prototype. The technology will benefit deep space exploration and humans to Mars goals.

Primary U.S. Work Locations and Key Partners



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Generator

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Organizations Performing Work	Role	Type	Location
★ Langley Research Center (LaRC)	Lead Organization	NASA Center	Hampton, Virginia

Primary U.S. Work Locations
Virginia

Project Website:
<https://www.nasa.gov/directorates/spacetech/home/index.html>
Organizational Responsibility**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Langley Research Center (LaRC)

Responsible Program:

Center Innovation Fund: LaRC CIF

Project Management**Program Director:**

Michael R Lapointe

Program Manager:

Julie A Williams-byrd

Principal Investigator:

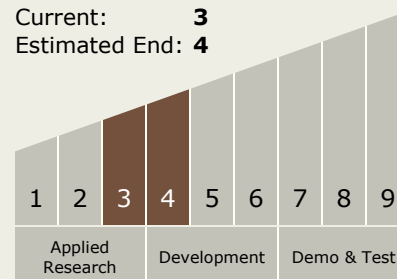
Sang H Choi

Technology Maturity (TRL)

Start: 3

Current: 3

Estimated End: 4



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
 - └ TX03.1 Power Generation and Energy Conversion
 - └ TX03.1.6 Other Advanced Concepts for Generating/Converting Power